8. Manasa

Program Name: Manasa.java **Input File: manasa.dat**

Manasa the superhuman likes swimming long distances in rivers, and relishes the challenge of swimming against a river's current. However, even superhumans struggle while straining against the current for long periods of time, so she takes breaks while swimming to regain her strength.

Formally, Manasa can swim at a rate of V meters per second for T seconds. After T seconds, she has to recharge for S seconds, during which time the river carries her back at a rate of W meters per second.

Given that Manasa's source and destination are D meters apart, how many times does she need to start swimming in order to reach the other side?

Input:
The first line of input is a positive integer N (N <= 50), the number of test cases. Each test case is a single line with 5 integers V T W S D in order. Each of these is a positive integer at most 1,000,000,000.

Output:
For each test case, output the number of times Manasa must start swimming in order to reach her destination. If it is impossible for Manasa to reach her destination, output "Impossible". Format your output with the case number as in the samples.

Sample Input:
```
3
2 4 1 1 10
1 1 1 1 2
31415 92653 58979 32384 626433827
```

Sample Output:
```
Case #1: 2
Case #2: Impossible
Case #3: 1
```

Sample Explanation:
In the first sample, Manasa can swim 2 meters per second for 4 seconds, then has to take a break. After she swims 8 meters, she takes a 1 second break, during which the river's current takes her backwards by 1 meter, leaving her 7 meters ahead of where she began. She reaches her destination 10 meters from where she began during her second period of swimming.

In the second sample, Manasa swims a meter forwards, but then the current takes her back where she began. She will never reach two meters out from where she began.

In the third sample, Manasa shows she is truly superhuman, and makes it to the shore during her first swim.